CLAIMS

1. A dietary supplement comprising a first active ingredient comprising about 2 mg to about 800 mg paraxanthine, either natural or synthetic.
2. The dietary supplement of claim 1, further comprising a second active ingredient, selected from a group consisting of: gallic acid, (+)-catechin (C), (−)-epicatechin (EC), (+)-gallocatechin (GC), (−)-epigallocatechin (EGC), (−)-catechin gallate (CG), (−)-gallocatechin gallate (GCG), (−)-epicatechin gallate (ECG) and (−)-epigallocatechin gallate (EGCG), glycerides, propylene glycol, lauroyl macrogol, lauroyl macrogol derivatives, co-crystallization products of bioperine, piperine, black pepper, bergamottin, dihydroxybergamottin (CYP3A4), flavonoids (naringin, hesperidin, nobiletin, tangeretin, quercetin), pterostilbene, fisetin, phytosomes, salicin, fish oil (omega-3 fatty acids and specialized, small lipid pro-resolving epoxide derivatives), oxylipins, tart cherry, krill oil, astaxanthin, proteolytic enzymes, glucosamine sulfate, chondroitin sulfate, MSM (methylsulfonylmethane), SAMe (S-adenosylmethionine), ASU (avocado-soybean unsapponifiable fraction), cetyl myristoleate, *Dolichos* falcate, triterpenoids, *acacia catechu, Andrographis paniculata, Scutalleria baicalensis,* Agmatine sulfate, Stinging Nettle, Sea Buckthorn, Curcumin, *Cissus Quadrilangularis, Boswellia Serrata, Wasabia japonica* (wasabi extract for Tea Tree Oil), Emu Oil, *Arnica, Mangifera indica* L. (Anacardiaceae), *Lagenaria breviflora, Zingiber officinale* (ginger & gingerols/shogaols), *hoodia gordonii*, caffeine, yohimbine, methylsynephrine, synephrine, theobromine, flavenoids, tocopherols, theophylline, alpha-yohimbine, conjugated linoleic acid (CLA), octopamine, evodiamine, passion flower, red pepper, cayenne, raspberry ketone, guggul, green tea, guarana, kola nut, beta-Phenethylamines, *Acacia rigidula,* forskolin (*Coleus forskohlli*), theophylline, synephrine, yohimbine, *rhodiola*, ashwagandha, *ginseng, ginkgo biloba*, siberian *ginseng,* astragalus, licorice, green tea, reishi, dehydroepiandrosterone (DHEA), pregnenolone, tyrosine, N-acetyl-tyrosine, glucuronolactone, taurine, Acetyl-L-carnitine, 5-hydroxytryptophan, tryptophan, Phenethylamines, *Sceletium tortuosum* (and Mesembrine alkaloids), *Dendrobium* sp., *Acacia rigidula,* PQQ (Pyroloquinoline quinone), Ubiquinone(01), Nicotinamide riboside, picamilon, Huperzine A (Chinese clubmoss

or *Huperzia serrata*, L-dopa, *Mucuna pruriens*, and forskolin (*Coleus forskohlli*), 2-(dimethylamino)ethanol (DMAE), DMAE bitartrate, and combinations thereof.

3. The dietary supplement of claim 1, further comprising a pharmaceutically acceptable carrier.
4. The dietary supplement of claim 1, wherein the supplement is in a solid oral dosage form.
5. The dietary supplement of claim 1, wherein the supplement is in a topical form for administration.
6. The dietary supplement of claim 1, further comprising a paraxanthine congener or paraxanthine analog.
7. The dietary supplement of claim 6, wherein said paraxanthine congener or analog is selected from the group consisting of caffeine, methyl caffeine, theobromine, theophylline, liberine, methylliberine, and combinations thereof.
8. The dietary supplement of claim 7, wherein the paraxanthine congener or analog is caffeine.
9. The dietary supplement of claim 8, wherein the effective dose of caffeine is lower than the effective dose of caffeine in a composition without paraxanthine.

10. Use of a composition comprising about 2 mg to about 800 mg of paraxanthine, either natural or synthetic, in the manufacture of a medicament for improving physical performance or energy to a subject.
11. The use of claim 10, wherein upon administration of the composition, the subject experiences improvement of at least one of mood, energy, focus, concentration or sexual desire or a reduction of at least one of anxiety, fatigue, perception of effort or perception of pain.
12. The use of claim 11, wherein upon continued administration to the subject, the composition does not create dependence in the subject and/or withdrawal effect in the subject when continued use is ceased.
13. The use of claim 10, wherein the amount of paraxanthine provided is about 50 mg to about 400 mg.
14. The use of claim 10, wherein the subject experiences a decrease in fatigue of at least about 6 percent.

15. The use of claim 10, wherein the subject experiences an increase in energy of at least about 8 percent.
16. The use of claim 10, wherein the composition further comprises at least one ingredient selected from the group consisting of caffeine, theobromine, naringin, hesperidin, 2-(dimethylamino)ethanol (DMAE), DMAE bitartrate, and huperzine A.
17. Use of a composition comprising paraxanthine and a pharmaceutically acceptable carrier thereof, in the manufacture of a medicament for treating a condition in a subject.
18. The use of claim 17, wherein the condition is selected from narcolepsy, epilepsy, attention deficit disorders, attention deficit hyperactivity syndrome (ADHD), cognitive deficit disorders, palsies, uncontrolled anger, migraine, substance abuse addictions, eating disorders, depression, anxiety disorders, traumatic head injury (TBI), Parkinson's disease, Alzheimer’s, and dementia.
19. The use of claim 18, wherein the paraxanthine is present from about 2 mg to about 800 mg.
20. The use of claim 18, wherein the composition is to be administered in a therapeutically effective amount.